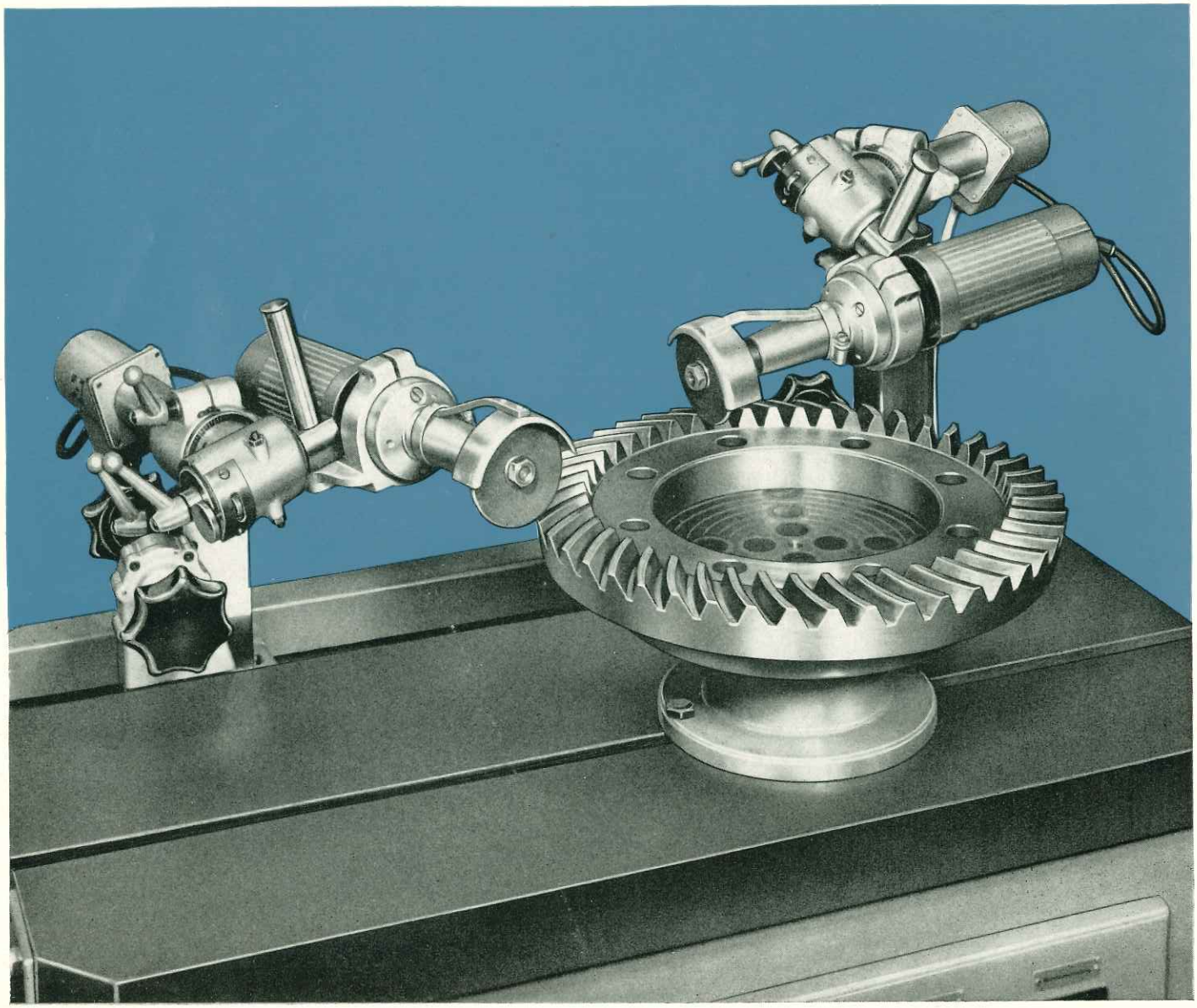
GRATOMAT

D.B.P.

9/14/66

Deburring Machines for any profile for any material



Hans Lenze & Co. KG

GRATOMAT

Improve your parts quality and decrease deburring costs

GRATOMAT Deburring Machines are the solution to your deburring and chamfering problems. The GRATOMATs have proven themselves throughout the industry for many years with many nationally known companies.

Benefit from these features:

- **WORKS FASTER AT LOWER COST**
  producing uniformity of chamfer unobtainable by hand or conventional equipment. Work speed and grinding pressure can precisely be adjusted to provide exact depth of chamfer and angle of cut desired.

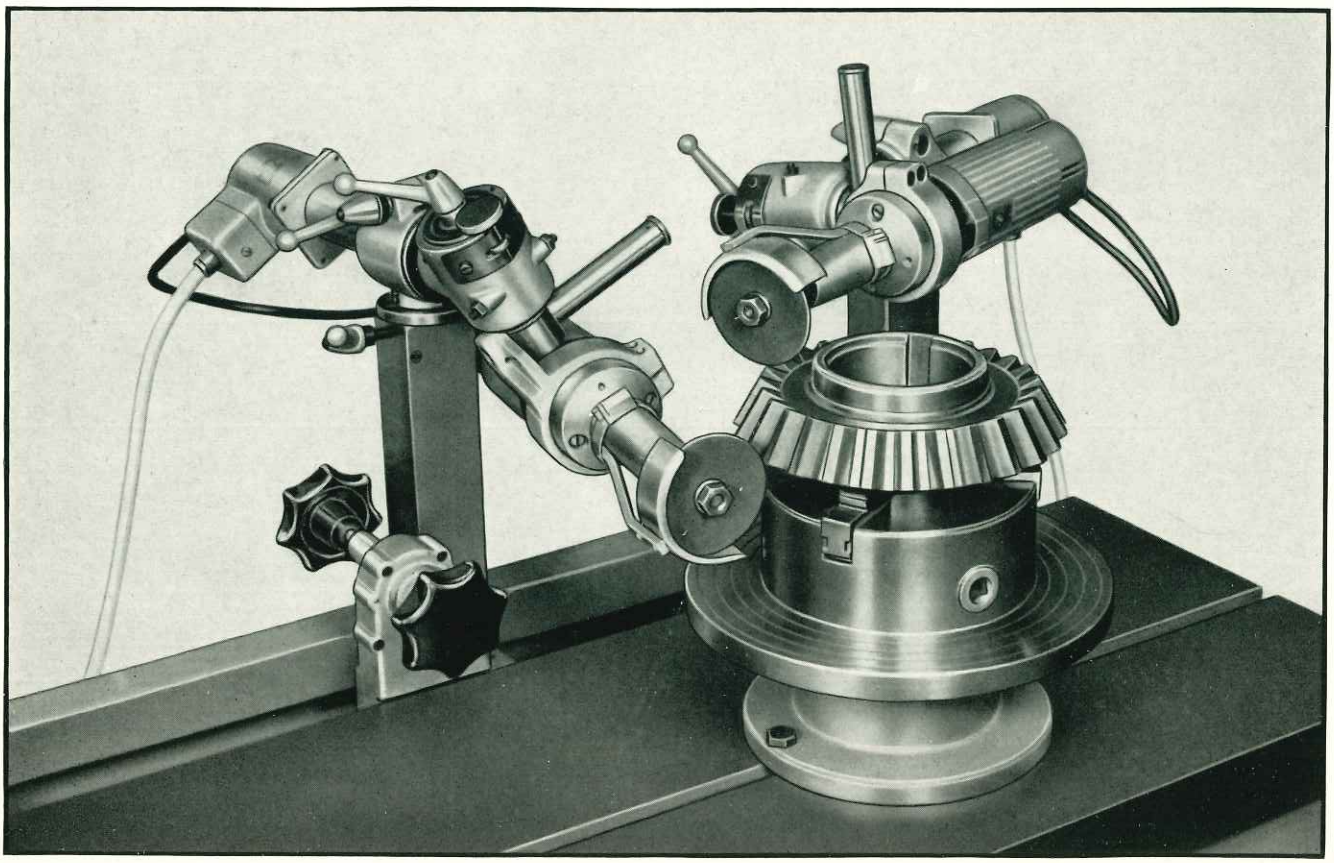
- **FULLY CALIBRATED DIAL-POSITIONING**
  ensures consistently reliable performance and permits exact duplication of settings when running a large variety of parts. Original set-up takes 3 – 5 minutes; changeover even less.

- **SIMPLE OPERATION**
  Only one tool – a simple grinding wheel – is required for all jobs eliminating change gears, templates and special form tools. Except for loading and unloading, operation is fully automatic and does not require skilled labor.

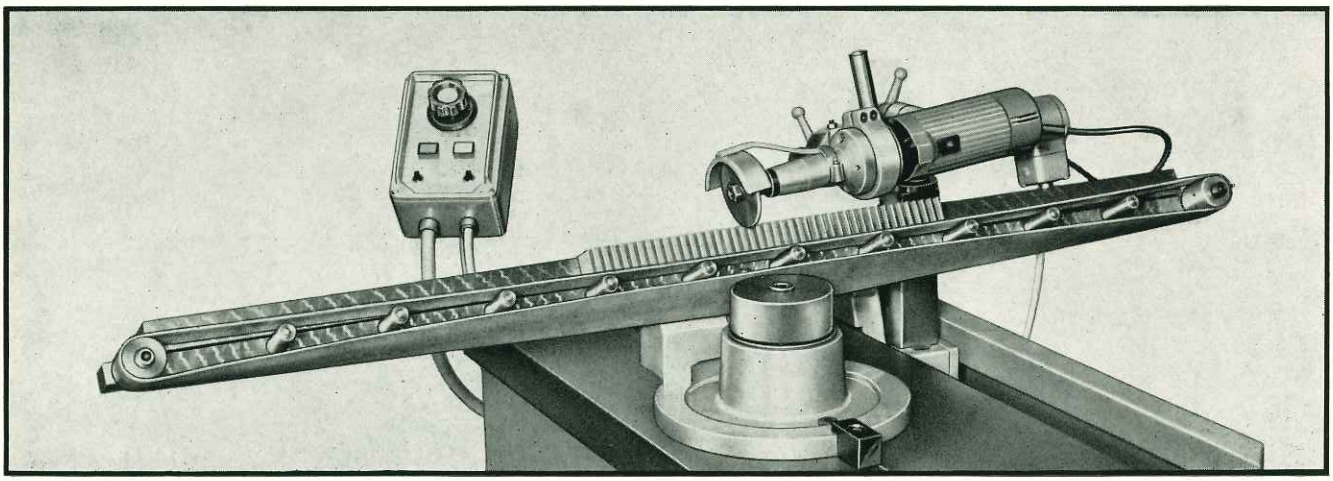
- **FLEXIBILITY**
  The standard GRATOMAT handles all types of gears within its work range. Position of grinder is infinitely variable to allow working from any angle making machine adaptable to many shapes other than gears.

- **DECREASE IN PART HANDLING**
  is made possible because loading and unloading can be accomplished while next gear is being hobbed or shaped. Minimum floor space requirements enable machine to be fitted into existing production lines.

- **LARGE VOLUME PRODUCTION**
  can be achieved with machines equipped with two grinding units deburring both sides of a gear at the same time. A group arrangement of several machines, interconnected with each other for spacing of work cycle, can be serviced by a single operator.



DEBURRING OF RACKS

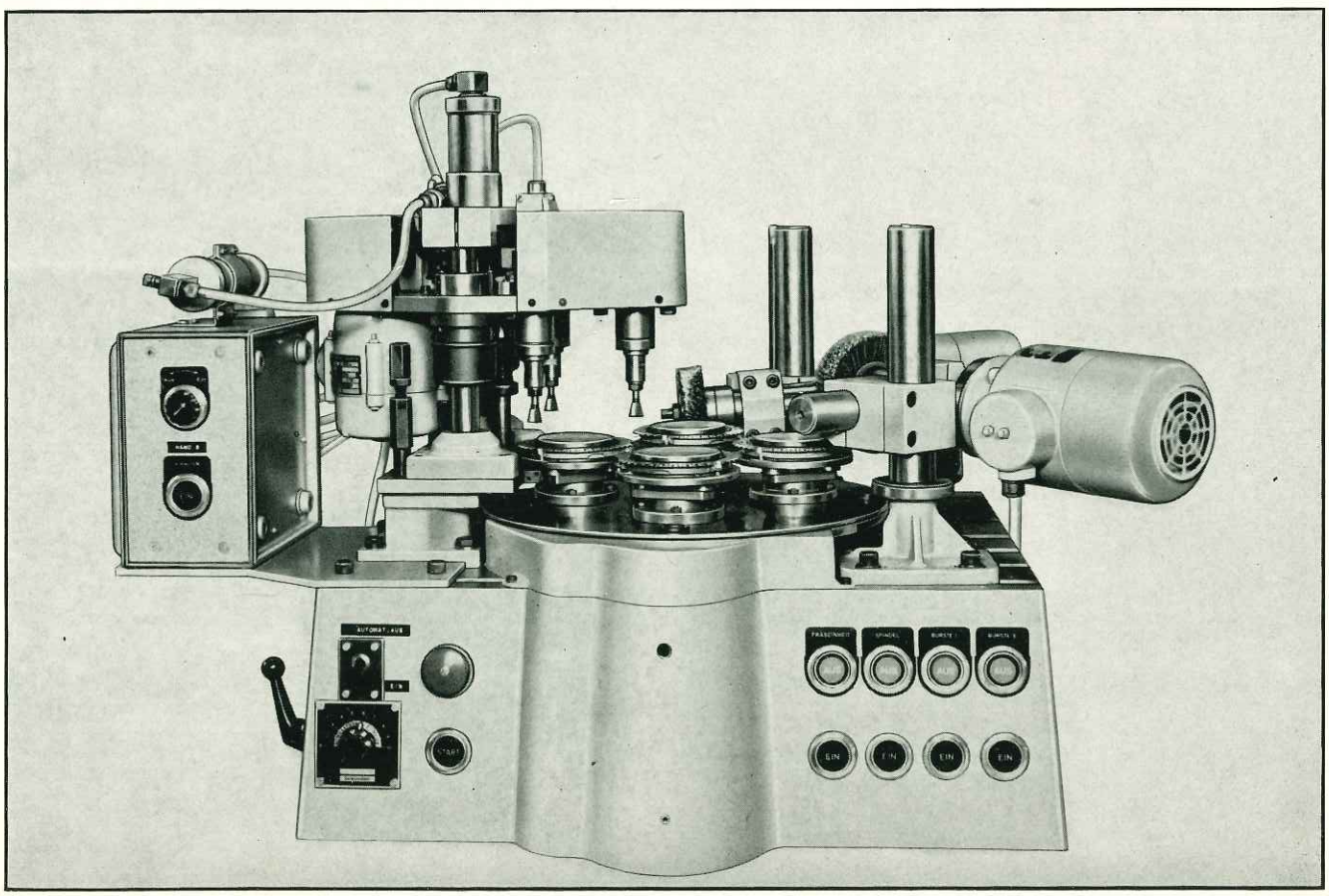


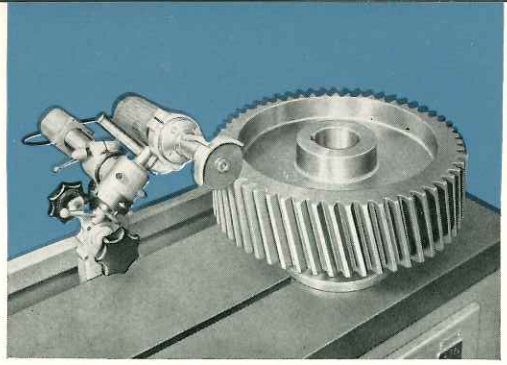
A Rack Deburring Attachment is available as optional equipment. Its conveyor transforms the rotation of the faceplate into horizontal movement of racks, lead screws and similar workpieces. The deburring operation remains automatic with continuous loading possible.

Deburring and finishing machine

("Rausch" System)

The machine is equipped with a number of rotating stations. Parts are moved to contact tools by automatic indexing or by continuous rotation of table. Tooling may include grinding wheels, brushes, cloth heads, milling cutters and similar rotating tools.

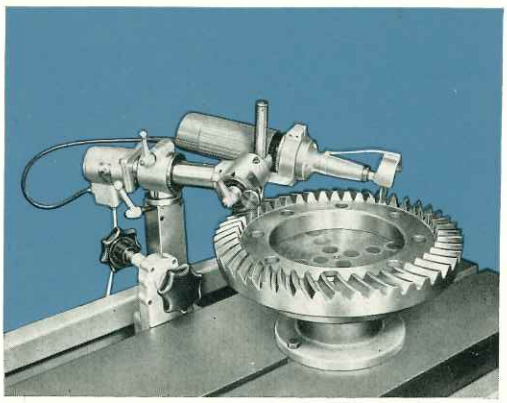




MACHINE DATA

Max. Workpiece Diameter:	56"
Max. Workpiece Height:	16"
Max. Workpiece Weight:	700 lbs
	and / or 1300 lbs
Diametral Pitch Range:	2.5 – 25 D. P.
	and / or 0.75 – 2.5 D. P.
Work Speed (infinitely variable):	0 – 6 RPM

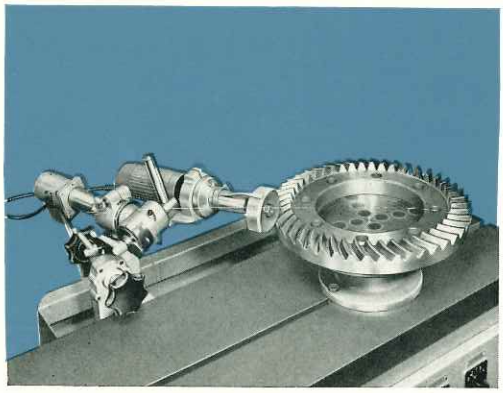
SPUR, HELICAL, WORM GEARS, SPROCKETS AND SPLINES



Workpiece Revolutions per Cycle:	1 – 3
Faceplate Diameter:	$10^{1}/_{4}$"
Centering Bore in Faceplate:	$^{5}/_{8}$"
Grinding Speed:	25,000 RPM
	and / or 5,500 RPM approx.
Working Height:	34"
Overall Height:	56"
Floor Space:	21" x 34"
Weight:	465 lbs
Power Requirement:	700 Watts
Wiring:	110 V / 60 cycle, single-phase A. C.

Please inquire for special machines to handle gearing up to unlimited weight and diameter.

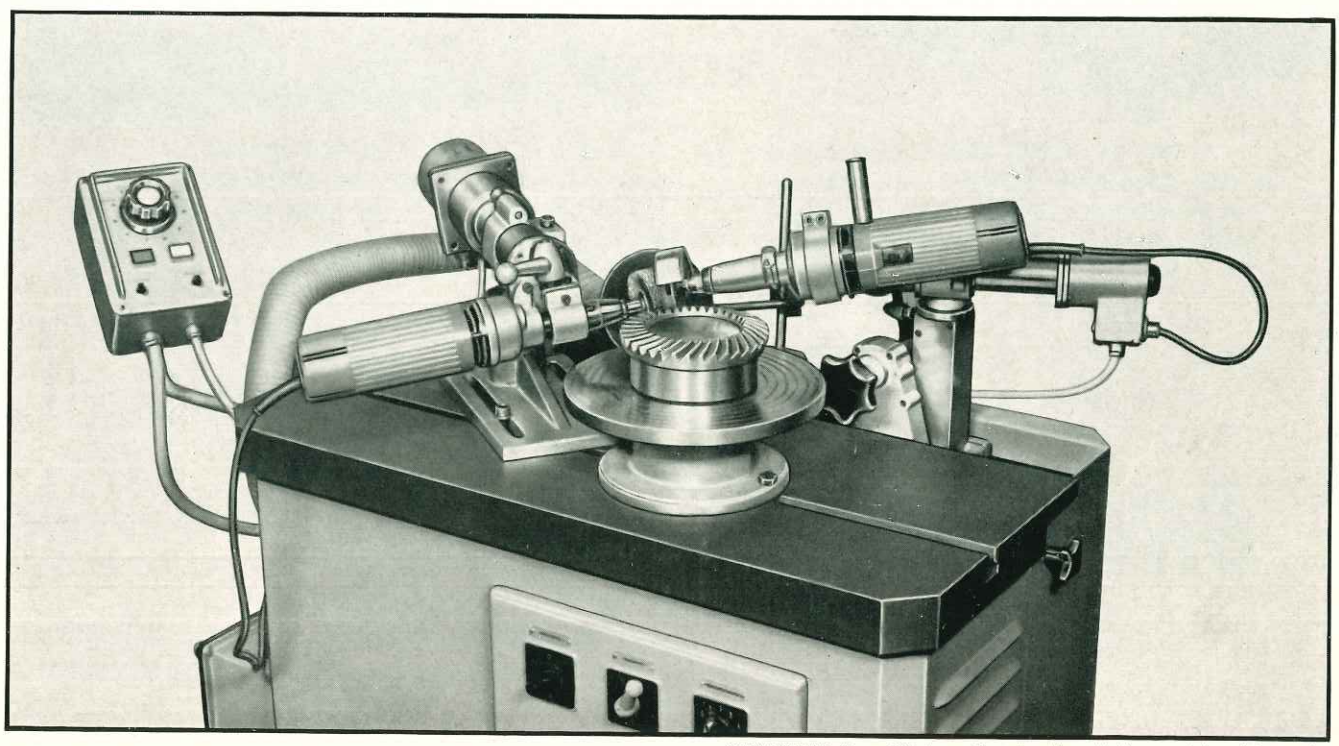
SPIRAL BEVEL, STRAIGHT BEVEL, INTERNAL AND EXTERNAL GEARS



TIME EXAMPLE

Deburring of spiral gear; 4.75 pitch diameter, 8 D.P., 40 teeth, 30 seconds cycle time per side or 60 seconds total time for both sides. However, a GRATOMAT equipped with two grinding units would simultaneously deburr both sides in 30 seconds only. Machine can be pre-set up to 3 revolutions of gear per cycle in case of very heavy burrs. Grinding wheel change takes approx. $^{1}/_{2}$ minute.

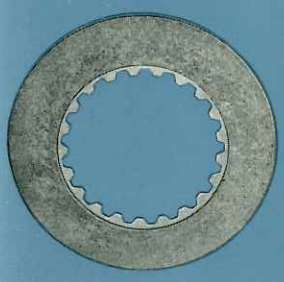
RACKS, SEGMENTS AND ODD GEARING

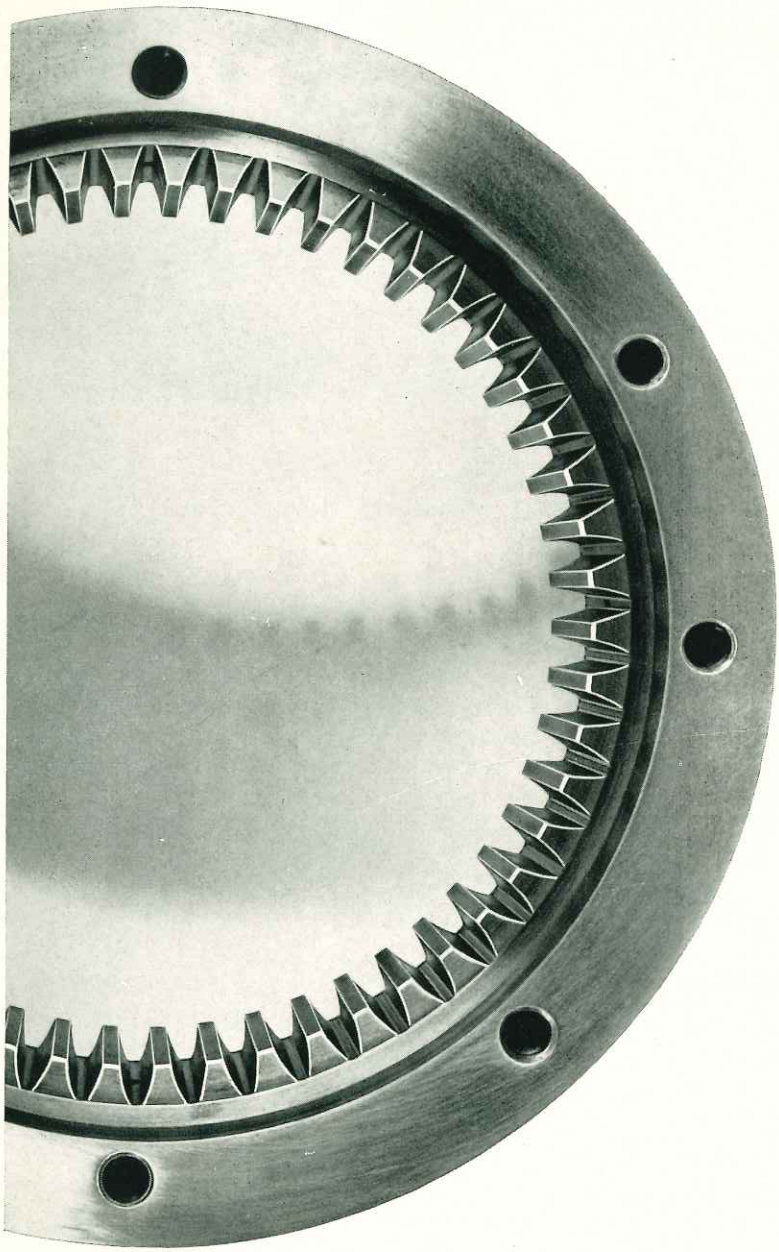


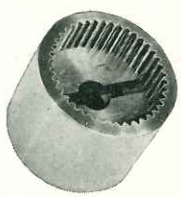
GRATOMAT Type 300 L equipped with grinding and brushing units

AUTOMATIC OPERATION

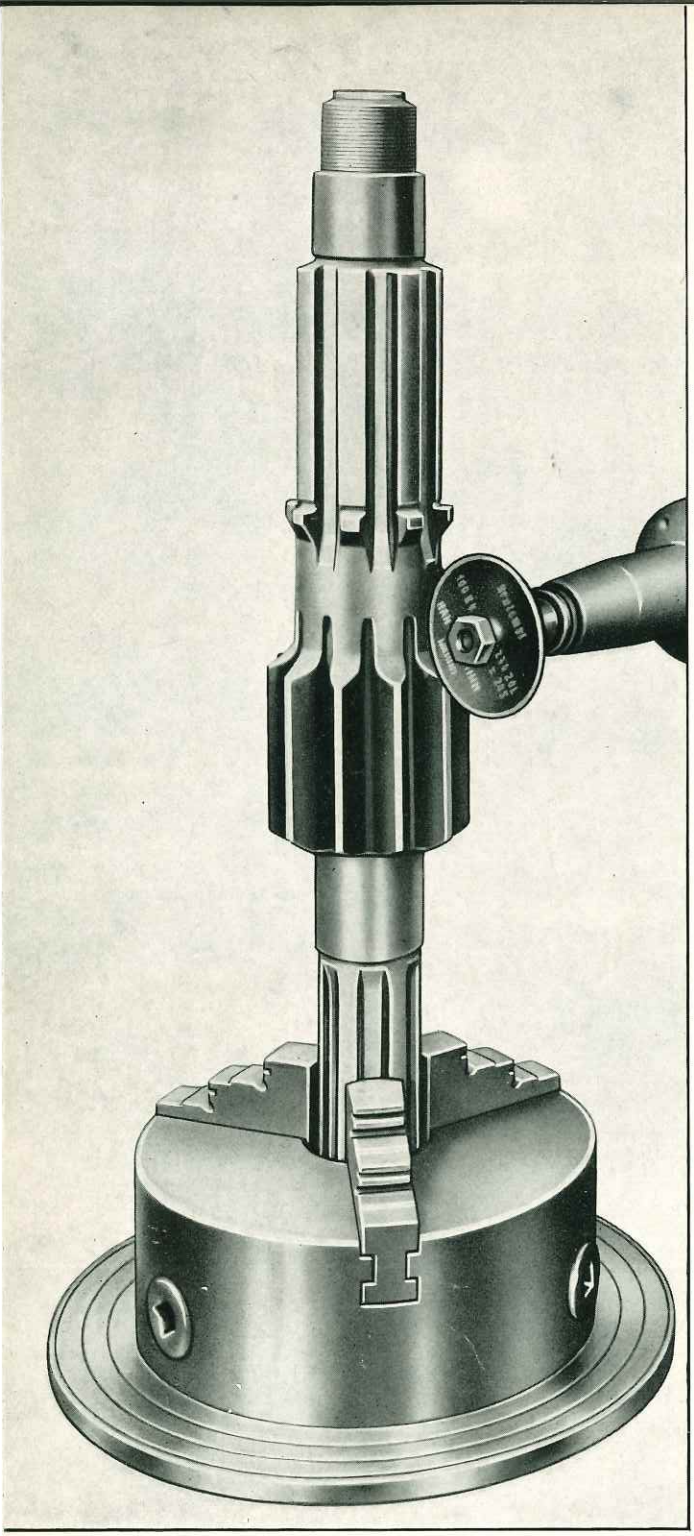
With the workpiece centered on the faceplate, the operator presses the automatic cycle button and the workpiece will start to rotate at a predetermined speed. The grinding unit will switch on lowering the floating spindle with its grinding wheel to contact the work.



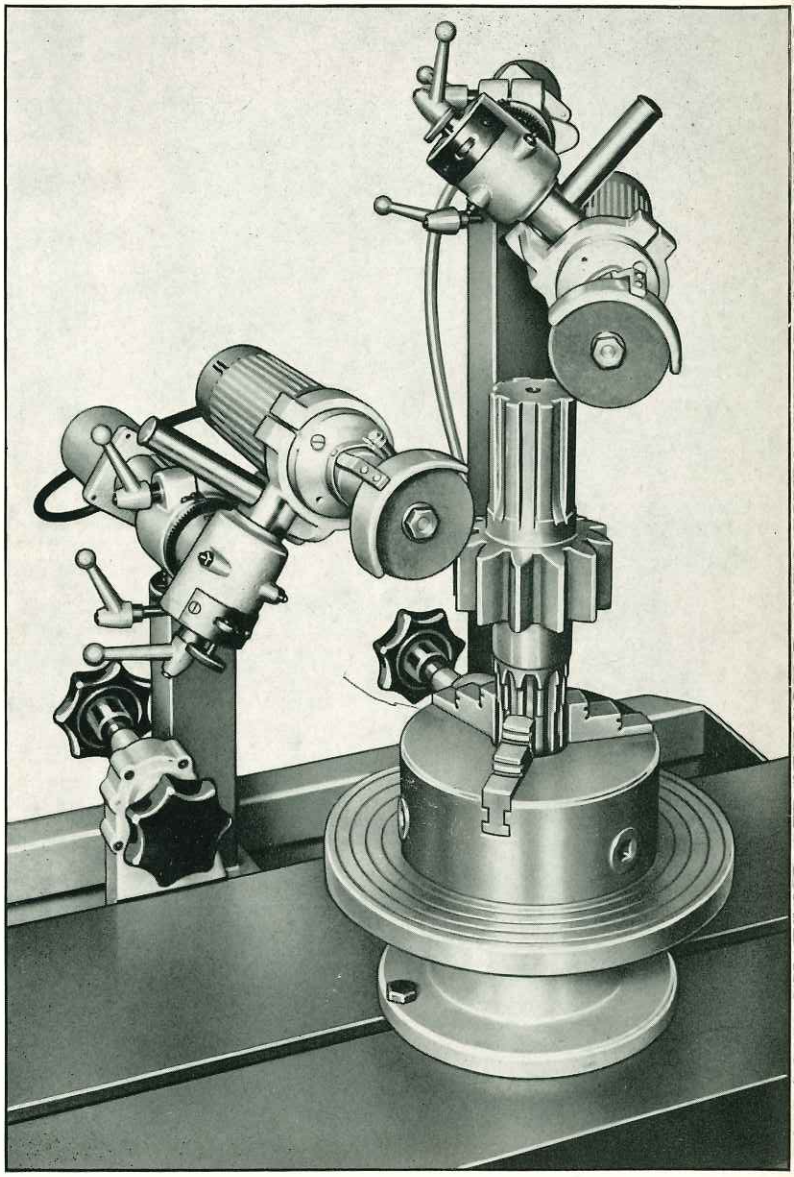




The grinding wheel then automatically follows the gear tooth form deburring the entire profile. After completion of cycle, faceplate and grinding unit will stop with the grinding wheel being automatically raised from work by means of a solenoid. The machine is then free for reloading. The amount of deburring or depth of chamfer may be adjusted according to requirements by means of infinitely variable speed of faceplate (work speed) and grinding pressure applied.



PINIONS



Finishing of pinions always presented a problem regardless whether done manually or by machine. The GRATOMAT deburrs and chamfers even such complex pinions where the root is reaching into the hub or shaft. It is particularly with such difficult problems involving restricted clearance that the GRATOMAT proves the great value of its infinitely adjustable grinding unit which allows working from any angle.

You are invited to send us samples of your parts for test-deburring! The will be returned to you along with detailed machining times — no obligation or charge. Also ask for a reference installation of a GRATOMAT in your area.

GRATOMAT

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